

ATOC 7500-001, Fall 2006
Sessions 3.1-3.5

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HOMEWORK #1
Due September 11 2006

Problem 1:

Write program in Matlab for generating random numbers with Lognormal distribution. The program is to include capability to display histogram of probability density function. Generate samples of random numbers using increasing number of sample members: 10, 100, 1000, 10000. Compute mean, standard deviation and mode from the sample and compare to the true values. Plot results (histogram with display of point statistics)

Problem 2:

Write program in Matlab for generating random vectors with Lognormal distribution. This problem assumes knowledge of covariance matrix. Use example from the exercise done in the class for the Gaussian random vectors.

As in the Problem 1, the program is to include capability to display histogram of probability density function(s). Generate samples of random numbers using increasing number of sample members: 10, 100, 1000, 10000. Compute mean, standard deviation and mode from the sample and compare to the true values. Plot results (histogram with display of point statistics)

In writing the programs do not use Matlab statistics package libraries. It has to be your own program. Could use as example the programs shown in the class.